AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Canceled).

Claim 2 (Currently amended): An extruded tantalum billet having a cylindrical shape having a cross section with an aspect ratio L/D of greater than 0.5 and having a diameter of 3 1/2 inches or greater, wherein said extruded tantalum billet is ingot-derived and has a purity of at least about 99.99% and wherein said extruded tantalum billet has a substantially uniform grain size throughout the cross section of the extruded tantalum billet after extrusion, and said extruded tantalum billet has an average grain size throughout the cross section of the extruded tantalum billet of about 150 microns or less, and said extruded tantalum billet is about 98% or more recrystallized.

Claim 3 (Canceled)

Claim 4 (Previously presented): The extruded tantalum billet of claim 2, wherein said extruded tantalum billet has an average grain size of about 100 microns or less.

Claim 5 (Previously presented): The extruded tantalum billet of claim 2, wherein said extruded tantalum billet has an average grain size of about 50 microns or less.

Claim 6 (Previously presented): The extruded tantalum billet of claim 2, wherein said extruded tantalum billet has an average grain size of from about 25 microns to about 100 microns.

Claim 7 (Original): The extruded tantalum billet of claim 2, having a purity of at least about 99.995%.

Claim 8 (Original): The extruded tantalum billet of claim 2, wherein said tantalum billet is fully recrystallized.

Claims 9-11 (Canceled)

Claim 12 (Original): The extruded tantalum billet of claim 2, having a purity of from about 99.995% to about 99.999%

Claim 13 (Original): The extruded tantalum billet of claim 2, further comprising at least one alloy material.

Claims 14-17 (Canceled)

Claim 18 (Currently amended): A process for making the extruded tantalum billet of claim 2 comprising extruding a tantalum ingot having a cylindrical shape having a cross section with a diameter of 6 inches to about 14 inches and having a metal purity of at least 99.99% at a sufficient temperature and for a sufficient time to at least partially recrystallize the tantalum billet during extrusion and form said extruded tantalum billet having a cylindrical shape with an aspect ratio L/D greater than 0.5 with a reduced diameter of 3 1/2 inches or greater and a substantially uniform grain size throughout the cross section of the extruded tantalum billet from said extruding, and said extruded tantalum billet has an average grain size throughout the cross section of the extruded tantalum billet of about 150 microns or less, and said extruded tantalum billet is about 98% or more recrystallized.

Claim 19 (Original): The process of claim 18, wherein said sufficient temperature is from about 1200 °F to about 2950 °F.

Claim 20 (Original): The process of claim 18, wherein said temperature is uniform throughout the extrusion process.

Claim 21 (Original): The process of claim 18, further comprising the step of water

quenching the extruded tantalum billet after extrusion.

Claim 22 (Original): The process of claim 18, further comprising machine cleaning the extruded tantalum billet.

Claim 23 (Currently amended): A process for making the extruded tantalum billet of claim 2, comprising extruding a starting tantalum billet having a cylindrical shape having a cross section with a diameter of 6 inches to about 14 inches and having a metal purity of at least 99.99% at a sufficient temperature and for a sufficient time to at least partially recrystallize the tantalum billet to form said extruded tantalum billet having a cylindrical shape with an aspect ratio L/D greater than 0.5 with a reduced diameter of 3 1/2 inches or greater and a substantially uniform grain size throughout the cross section of the extruded tantalum billet from said extruding, and said extruded tantalum billet has an average grain size throughout the cross section of the extruded tantalum billet of about 150 microns or less, and said extruded tantalum billet is about 98% or more recrystallized.

Claim 24 (Original): The process of claim 23, wherein said sufficient temperature is from about 1200 °F to about 2950 °F.

Claim 25 (Original): The process of claim 23, wherein said temperature is uniform throughout the extrusion process.

Claim 26 (Original): The process of claim 23, further comprising the step of water quenching the extruded tantalum billet after extrusion.

Claim 27 (Original): The process of claim 23, further comprising machine cleaning the extruded tantalum billet.

Claim 28 (Currently amended): A process for making the extruded tantalum billet of claim 2, comprising cutting an ingot into at least one starting billet having a cylindrical shape

having a cross section with a diameter of 6 inches to about 14 inches and having a metal purity of at least 99.99% and either applying a protective coating on said starting billet or placing said starting billet in a can;

extruding the starting billet at a sufficient temperature and for a sufficient time to at least partially recrystallize the tantalum billet and to form said extruded tantalum billet having a cylindrical shape with an aspect ratio L/D greater than 0.5 with a reduced diameter of 3 1/2 inches or greater and a substantially uniform grain size throughout the cross section of the extruded tantalum billet from said extruding, and said extruded tantalum billet has an average grain size throughout the cross section of the extruded tantalum billet of about 150 microns or less, and said extruded tantalum billet is about 98% or more recrystallized.

Claim 29 (Original): The process of claim 28, wherein said sufficient temperature is from about 1200 °F to about 2950 °F.

Claim 30 (Original): The process of claim 28, wherein said temperature is uniform throughout the extrusion process.

Claim 31 (Original): The process of claim 28, further comprising the step of water quenching the extruded tantalum billet after extrusion.

Claim 32 (Original): The process of claim 28, further comprising machine cleaning the extruded tantalum billet.

Claim 33 (Original): The process of claim 28, wherein said ingot is obtained by the electron beam melting of a high purity tantalum powder feedstock.

Claim 34 (Original): The process of claim 28, wherein said protective coating or can is removed after said extruding.

Claim 35 (Original): The process of claim 34, wherein said protective coating is removed

by acid washing or machine cleaning, or both.

Claim 36 (Canceled)

Claim 37 (Currently amended): An extruded niobium billet having a cylindrical shape having a cross section with an aspect ratio L/D of greater than 0.5 and having a diameter of 3 1/2 inches or greater, wherein said extruded niobium billet is ingot-derived and has a purity of at least about 99.99% and wherein said extruded niobium billet has a substantially uniform grain size throughout the cross section of the extruded niobium billet after extrusion, and said extruded niobium billet has an average grain size throughout the cross section of the extruded niobium billet of about 150 microns or less, and said extruded niobium billet is about 98% or more recrystallized.

Claim 38 (Canceled)

Claim 39 (Previously presented): The extruded niobium billet of claim 37, wherein said extruded niobium billet has an average grain size of about 100 microns or less.

Claim 40 (Previously presented): The extruded niobium billet of claim 37, wherein said extruded niobium billet has an average grain size of about 50 microns or less.

Claim 41 (Previously presented): The extruded niobium billet of claim 37, wherein said extruded niobium billet has an average grain size of from about 25 microns to about 100 microns.

Claim 42 (Original): The extruded niobium billet of claim 37, having a purity of at least about 99.995%.

Claim 43 (Original): The extruded niobium billet of claim 37, wherein said niobium billet is fully recrystallized.

Claims 44-46 (Canceled)

Claim 47 (Original): The extruded niobium billet of claim 37, having a purity of from about 99.995% to about 99.999%

Claim 48 (Original): The extruded niobium billet of claim 37, further comprising at least one alloy material.

Claims 49-52 (Canceled)

Claim 53 (Currently amended): A process for making the extruded niobium billet of claim 37 comprising extruding a niobium ingot having a cylindrical shape having a cross section with a diameter of 6 inches to about 14 inches and having a metal purity of at least 99.99% to form said extruded niobium billet, wherein said extruding is at a sufficient temperature and for a sufficient time to at least partially recrystallize the niobium billet during extrusion and said extruding forms said extruded niobium billet having a cylindrical shape with an aspect ratio L/D greater than 0.5 with a reduced diameter of 3 1/2 inches or greater and a substantially uniform grain size throughout the cross section of the extruded niobium billet from said extruding, and said extruded niobium billet has an average grain size throughout the cross section of the extruded niobium billet of about 150 microns or less, and said extruded niobium billet is about 98% or more recrystallized.

Claim 54 (Original): The process of claim 53, wherein said sufficient temperature is from about 1000 °F to about 2650 °F.

Claim 55 (Original): The process of claim 53, wherein said temperature is uniform throughout the extrusion process.

Claim 56 (Original): The process of claim 53, further comprising the step of water quenching the extruded niobium billet after extrusion.

Claim 57 (Original): The process of claim 53, further comprising machine cleaning the

extruded niobium billet.

Claim 58 (Currently amended): A process for making the extruded niobium billet of claim 37, comprising extruding a starting niobium billet having a cylindrical shape having a cross section with a diameter of 6 inches to about 14 inches and having a metal purity of at least 99.99% at a sufficient temperature and for a sufficient time to at least partially recrystallize the niobium billet and form said extruded niobium billet having a cylindrical shape with an aspect ratio L/D greater than 0.5 with a reduced diameter of 3 1/2 inches or greater and a substantially uniform grain size throughout the cross section of the extruded niobium billet from said extruding, and said extruded niobium billet has an average grain size throughout the cross section of the extruded niobium billet of about 150 microns or less, and said extruded niobium billet is about 98% or more recrystallized.

Claim 59 (Original): The process of claim 58, wherein said sufficient temperature is from about 1000 °F to about 2650 °F.

Claim 60 (Original): The process of claim 58, wherein said temperature is uniform throughout the extrusion process.

Claim 61 (Original): The process of claim 58, further comprising the step of water quenching the extruded niobium billet after extrusion.

Claim 62 (Original): The process of claim 58, further comprising machine cleaning the extruded niobium billet.

Claim 63 (Currently amended): A process for making the extruded niobium billet of claim 37, comprising cutting an ingot into at least one starting billet having a cylindrical shape having a cross section with a diameter of 6 inches to about 14 inches and having a metal purity of at least 99.99% and either applying a protective coating on said starting billet or placing said

starting billet in a can;

extruding the starting billet at a sufficient temperature and for a sufficient time to at least partially recrystallize the niobium billet and form said extruded niobium billet having a cylindrical shape with an aspect ratio L/D greater than 0.5 with a reduced diameter of 3 1/2 inches or greater and a substantially uniform grain size throughout the cross section of the extruded niobium billet from said extruding, and said extruded niobium billet has an average grain size throughout the cross section of the extruded niobium billet of about 150 microns or less, and said extruded niobium billet is about 98% or more recrystallized.

Claim 64 (Previously presented): The process of claim 63, wherein said sufficient temperature is from about 1000 °F to about 2650 °F.

Claim 65 (Original): The process of claim 63, wherein said temperature is uniform throughout the extrusion process.

Claim 66 (Original): The process of claim 63, further comprising the step of water quenching the extruded niobium billet after extrusion.

Claim 67 (Original): The process of claim 63, further comprising machine cleaning the extruded niobium billet.

Claim 68 (Original): The process of claim 63, wherein said ingot is obtained by the electron beam melting of a high purity niobium powder feedstock.

Claim 69 (Original): The process of claim 63, wherein said protective coating or can is removed after said extruding.

Claim 70 (Original): The process of claim 69, wherein said protective coating is removed by acid washing or machine cleaning, or both.

Claim 71 (Original): The process of claim 18, further comprising annealing said extruded

tantalum billet.

Claim 72 (Original): The process of claim 71, wherein said annealing occurs at a temperature and for a time sufficient to at least partially recrystallize the extruded tantalum billet during annealing.

Claim 73 (Previously presented): The process of claim 71, wherein said annealing occurs at a temperature of from about 1742°F to about 2102°F for about 2 hours.

Claim 74 (Original): The process of claim 23, further comprising annealing said extruded tantalum billet.

Claim 75 (Original): The process of claim 74, wherein said annealing occurs at a temperature and for a time sufficient to at least partially recrystallize the extruded tantalum billet during annealing.

Claim 76 (Previously presented): The process of claim 74, wherein said annealing occurs at a temperature of from about 1742°F to about 2102°F for about 2 hours.

Claim 77 (Original): The process of claim 28, further comprising annealing said extruded tantalum billet.

Claim 78 (Original): The process of claim 77, wherein said annealing occurs at a temperature and for a time sufficient to at least partially recrystallize the extruded tantalum billet during annealing.

Claim 79 (Previously presented): The process of claim 77, wherein said annealing occurs at a temperature of from about 1742°F to about 2102°F for about 2 hours.

Claim 80 (Original): The process of claim 53, further comprising annealing said extruded niobium billet.

Claim 81 (Original): The process of claim 80, wherein said annealing occurs at a

temperature and for a time sufficient to at least partially recrystallize the extruded niobium billet during annealing.

Claim 82 (Previously presented): The process of claim 80, wherein said annealing occurs at a temperature of from about 1742°F to about 2102°F for about 2 hours.

Claim 83 (Original): The process of claim 58, further comprising annealing said extruded niobium billet.

Claim 84 (Original): The process of claim 83, wherein said annealing occurs at a temperature and for a time sufficient to at least partially recrystallize the extruded niobium billet during annealing.

Claim 85 (Previously presented): The process of claim 83, wherein said annealing occurs at a temperature of from about 1742°F to about 2102°F for about 2 hours.

Claim 86 (Original): The process of claim 63, further comprising annealing said extruded niobium billet.

Claim 87 (Original): The process of claim 86, wherein said annealing occurs at a temperature and for a time sufficient to at least partially recrystallize the extruded niobium billet during annealing.

Claim 88 (Previously presented): The process of claim 86, wherein said annealing occurs at a temperature of from about 1742°F to about 2102°F for about 2 hours.

Claim 89 (Currently amended): A process for making the extruded tantalum billet of claim 2, comprising extruding a tantalum ingot having a cylindrical shape <u>having a cross section</u> with a diameter of 6 inches to about 14 inches and having a metal purity of at least 99.99% to form an extruded tantalum billet and then annealing said extruded tantalum billet at a sufficient temperature and for a sufficient time to at least partially recrystallize the extruded tantalum billet

and form said extruded tantalum billet having a cylindrical shape with an aspect ratio L/D greater than 0.5 with a reduced diameter of 3 1/2 inches or greater and a substantially uniform grain size throughout the cross section of the extruded tantalum billet from said extruding, and said extruded tantalum billet has an average grain size throughout the cross section of the extruded tantalum billet of about 150 microns or less, and said extruded tantalum billet is about 98% or more recrystallized.

Claim 90 (Currently amended): A process for making the extruded tantalum billet of claim 2, comprising extruding a starting tantalum billet having a cylindrical shape having a cross section with a diameter of 6 inches to about 14 inches and having a metal purity of at least 99.99% to form said extruded tantalum billet and then annealing said extruded tantalum billet for a sufficient time and for a sufficient temperature to at least partially recrystallize the extruded tantalum billet and form said extruded tantalum billet having a cylindrical shape with an aspect ratio L/D greater than 0.5 with a reduced diameter of 3 1/2 inches or greater and a substantially uniform grain size throughout the cross section of the extruded tantalum billet from said extruding, and said extruded tantalum billet has an average grain size throughout the cross section of the extruded tantalum billet of about 150 microns or less, and said extruded tantalum billet is about 98% or more recrystallized.

Claim 91 (Currently amended): A process for making the extruded tantalum billet of claim 2, comprising cutting an ingot into at least one starting billet having a cylindrical shape having a cross section with a diameter of 6 inches to about 14 inches and having a metal purity of at least 99.99% and either applying a protective coating on said starting billet or placing said starting billet in a can;

extruding the starting billet to form said extruded tantalum billet and then annealing said extruded tantalum billet at a sufficient temperature and for a sufficient time to at

least partially recrystallize the extruded tantalum billet and form said extruded tantalum billet having a cylindrical shape with an aspect ratio L/D greater than 0.5 with a reduced diameter of 3 1/2 inches or greater and a substantially uniform grain size throughout the cross section of the extruded tantalum billet from said extruding, and said extruded tantalum billet has an average grain size throughout the cross section of the extruded tantalum billet of about 150 microns or less, and said extruded tantalum billet is about 98% or more recrystallized.

Claim 92 (Currently amended): A process for making the extruded niobium billet of claim 37, comprising extruding a niobium ingot having a cylindrical shape having a cross section with a diameter of 6 inches to about 14 inches and having a metal purity of at least 99.99% to form an extruded niobium billet and then annealing said extruded niobium billet at a sufficient temperature and for a sufficient time to at least partially recrystallize the extruded niobium billet and form said extruded niobium billet having a cylindrical shape with an aspect ratio L/D greater than 0.5 with a reduced diameter of 3 1/2 inches or greater and a substantially uniform grain size throughout the cross section of the extruded niobium billet from said extruding, and said extruded niobium billet has an average grain size throughout the cross section of the extruded niobium billet of about 150 microns or less, and said extruded niobium billet is about 98% or more recrystallized.

Claim 93 (Currently amended): A process for making the extruded niobium billet of claim 37, comprising extruding a starting niobium billet having a cylindrical shape having a cross section with a diameter of 6 inches to about 14 inches and having a metal purity of at least 99.99% to form said extruded niobium billet and then annealing said extruded niobium billet for a sufficient time and for a sufficient temperature to at least partially recrystallize the extruded niobium billet and form said extruded niobium billet having a cylindrical shape with an aspect ratio L/D greater than 0.5 with a reduced diameter of 3 1/2 inches or greater and a substantially

uniform grain size throughout the cross section of the extruded niobium billet from said extruding, and said extruded niobium billet has an average grain size throughout the cross section of the extruded niobium billet of about 150 microns or less, and said extruded niobium billet is about 98% or more recrystallized.

Claim 94 (Currently amended): A process for making the extruded niobium billet of claim 37, comprising cutting an ingot into at least one starting billet having a cylindrical shape having a cross section with a diameter of 6 inches to about 14 inches and having a metal purity of at least 99.99% and either applying a protective coating on said starting billet or placing said starting billet in a can;

extruding the starting billet to form said extruded niobium billet and then annealing said extruded niobium billet at a sufficient temperature and for a sufficient time to at least partially recrystallize the extruded niobium billet and form said extruded niobium billet having a cylindrical shape with an aspect ratio L/D greater than 0.5 with a reduced diameter of 3 1/2 inches or greater and a substantially uniform grain size throughout the cross section of the extruded niobium billet from said extruding, and said extruded niobium billet has an average grain size throughout the cross section of the extruded niobium billet of about 150 microns or less, and said extruded niobium billet is about 98% or more recrystallized.

Claim 95 (Previously presented): The extruded tantalum billet of claim 2, wherein said extruded tantalum billet has an aspect ratio of longitudinal grains that do not exceed 20.

Claims 96-97 (Canceled)

Claim 98 (Previously presented): The extruded tantalum billet of claim 2, having a grain size about the cross-section of the extruded tantalum billet that vary uniformly in accordance to a normal or Poissons distribution.

Claim 99 (Previously presented): The extruded tantalum billet of claim 98, wherein said grain size does not exhibit a duplex microstructure as evidenced by a bimodal grain size distribution.

Claim 100 (Previously presented): The extruded niobium billet of claim 37, having a grain size about the cross-section of the extruded niobium billet that vary uniformly in accordance to a normal or Poissons distribution.

Claim 101 (Previously presented): The extruded niobium billet of claim 100, wherein said grain size does not exhibit a duplex microstructure as evidenced by a bimodal grain size distribution.